

GOVERNMENT OF ANDHRA PRADESH

ABSTRACT

MA&UD Department – Municipal Solid Waste Management – Formulation of Andhra Pradesh Integrated Municipal Solid Waste Management Strategy 2014 approved - Orders – Issued.

MUNICIPAL ADMINISTRATION & URBAN DEVELOPMENT (H1) DEPARTMENT
G.O.Ms.No.64.

Dated: 13.02.2014.
Read the following:-

From the Commissioner & Director of Municipal Administration
Lr.Roc.No.26062/2013/H1, Dt. 03-02-2014.

ORDER:-

Solid Waste Management is one of the top priorities of the Government of Andhra Pradesh. For effective implementation of the Municipal solid Waste Management Rules, 2000 in all the Urban Local Bodies, it is felt that there is every need to formulate appropriate Solid Waste Management Strategy to guide the ULBs for effective handling Solid Waste. Accordingly, the Commissioner & Director of Municipal Administration has been instructed to formulate a draft strategy and submit the same to the Government.

2. Accordingly, after consultation with the relevant experts, the Commissioner & Director of Municipal Administration has submitted a draft Strategy on **Andhra Pradesh Integrated Municipal Solid Waste Management, 2014** for approval.

3. Government, after careful examination of the Andhra Pradesh Integrated Municipal Solid Waste Management Strategy 2014, hereby approve the same to enable Urban Local Bodies in the State to implement Municipal Solid Waste Rules, 2000 in letter and spirit by achieving the vision " and to equip the ULBs with efficient, environmentally friendly and sustainable waste management system with complete safe collection, transportation, treatment and disposal facilities and achieve the service benchmarks".

4. The approved strategy is herewith enclosed to this order as annexure. Further, Managing Director, Andhra Pradesh Urban Finance & Infrastructure Development Corporation (APUFIDC) Hyderabad is designated as the nodal agency for providing necessary financial services for effective implementation of the Strategy.

5. The Commissioner & Director of Municipal Administration is requested to take further necessary action in the matter.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

Dr. S.K. JOSHI,
PRINCIPAL SECRETARY TO GOVERNMENT (UD)

To

The Commissioner & Director of Municipal Administration. Hyderabad,
Managing Director, Andhra Pradesh Urban Finance & Infrastructure Development Corporation (APUFIDC), Hyderabad

Copy to:

Director General & Special Chief Secretary to Government Environment Protection Training and Research Institute, 91/4, Gachibowli, Hyderabad

PS to Principal Secretary (MA) to Government MA&UD Department

The OSD to M(MA&UD)

SC/SF

//FORWARDED ::BY:: ORDER//

SECTION OFFICER

ANNEXURE TO G.O.MS.No.64, MA &UD(H1) Dept., Dated: 13.02.2014.

Sl. No.	Contents	Page Nos
1.	Background	1
2.	Municipal Solid Waste Management Scenario in India	2
3.	Current Status of SWM in AP Urban Local Bodies	3
4.	Approaches - Municipal Solid Waste Management	4
4.1.	Decentralised Vs. Centralised approach	4
4.2.	Management of Multiple Waste streams	5
4.3.	Hierarchy of Waste Management – 5 Rs (Reduce, Reuse, Recycle, Recover and Remove)	5
5.	Vision	6
5.1.	Goals and Service Outcomes	6
6.	Key issues of Solid Waste Management	7
6.1.	Guiding Principles of SWM Strategy	7
7.	Strategic Interventions	8
7.1.	Door to Door Collection and Transportation of Waste generated	8
7.2.	Waste minimization and promotion of recycling of waste	8
7.3.	Engaging stakeholders in implementation	9
7.4.	Processing, Treatment and Disposal of Waste	10
7.5.	Strengthening the capacities of the ULBs	10
7.6.	State Level Institutional arrangement and programme support	11

1. Background

Municipalities have overall responsibility for Municipal Solid waste Management. However most of them are unable provide proper system to tackle the current situation. Magnitude and density of urban population in India is increasing rapidly and consequently the Municipal agencies spend about 5-25% of their budget on MSWM. Despite of such heavy expenditure, the present level of service in many urban areas is so low that there is a threat to the public health in particular and the environmental quality in general.

Collection and transportation activities constitute approximately 80–95% of the total budget of MSWM. Hence, it forms a key component in determining the economics of the entire MSWM system. On the contrary, disposal and treatment of waste is an underinvested area and open dumping, uncontrolled and poorly managed landfills are a common feature across most Indian cities and towns. The results pose a serious threat to the underground water reserves and surface water bodies through run –offs.

The challenges of municipal solid waste management range from insufficient capital expenditure, non-affordability to meet the O&M, lack of technical know-how, lack of public awareness, non-availability of land and fighting the opposition from the neighborhoods where the MSW facility is located

Managing the problem of solid waste in a more integrated and comprehensive manner, makes it imperative for the state government to set forth a strategy to address the different aspects of sanitation management related tackling solid waste in a systematic, coordinated and time-bound manner

Though the MSW Rules 2000 make the ULBs responsible for management of wastes, ULBs have to partner with private waste management companies, NGOs and RWAs for various segments of the MSW value chain due to various capacity constraints. In order to implement and comply with the MSW Rules 2000 and overcome capacity constraints at the local level, some states have come up with centralized waste management systems at the city level or regional level either on Non PPP or PPP approach. Centralized waste management systems at the city level are being practiced in Guwahati, Hyderabad and Chennai, among others. Regional level MSW management facilities have come up in Tamil Nadu and Gujarat

The need of the hour is to devise an efficient solid waste management system where in decision-makers and waste management planners can deal with the increase in complexity, and uncertainty. The Municipal Solid Waste (Management and Handling) Rules, 2000 (the 'MSW Rules'), issued by the Ministry of Environment and Forests, Government of India, under the Environment (Protection) Act, 1986, prescribe the manner in which the Authorities have to undertake collection, segregation, storage, transportation, processing and disposal of the municipal solid waste (the 'MSW') generated within their jurisdiction under their respective governing legislation.

In this context, there is need to revisit, develop, and implement appropriate strategy framework to guide the urban local bodies for effectively handling MSW in order to comply with the MSW (Management & Handling) Rules 2000 notified by the Ministry of Environment & Forest, Govt of India and related regulations. The framework will guide and support the urban local bodies in the state for managing the solid waste scientifically and cost effectively.

2. Municipal Solid Waste Management Scenario in India

The urban growth in India is faster than the average for the country and far higher for urban areas over rural. The proportion of population residing in urban areas has increased from 27.8 % in 2001 to 31.80 % in 2011 and likely to reach 50% by 2030. The number of towns has increased from 5,161 in 2001 to 7,935 in 2011. The rapid growth in urban areas has not been backed adequately with provisioning of basic sanitation infrastructure and thus leaving many Indian cities deficient in services as water supply, sewerage, storm water drainage, and solid waste management.

It is estimated that Urban India generates about 1.5 Lakhs Tonnes per day. The per capita waste generation in major cities ranges from 0.20 Kg to 0.6 Kg. Generally the collection efficiency ranges between 70 to 90% in major metro cities whereas in several smaller cities the collection efficiency is below 50%. The collection and disposal of municipal solid waste is one of the pressing problems of city life, which has assumed great importance in the recent past. Treatment of waste and scientific disposal of urban waste is not only absolutely necessary for the preservation and improvement of public health but it has an immense potential for resource recovery.

The composition of MSW at generation sources and collection points in India is observed to mainly consist of a large organic fraction (40–60%), ash and fine earth (30–40%), paper (3–6%) and plastic, glass and metals (each less than 1%). It is also estimated that the Urban Local Bodies spend about Rs.500 to Rs.1500 per tonne on solid waste for collection, transportation, treatment and disposal. About 60-70% of this amount is spent on street sweeping of waste collection, 20 to 30% on transportation and less than 5% on final disposal of waste, which shows that hardly any attention is given to scientific and safe disposal of waste. Landfill sites have not yet been identified by many municipalities and in several municipalities, the landfill sites have been exhausted and the respective local bodies do not have resources to acquire new land. Due to lack of disposal sites, even the collection efficiency gets affected.

Very few Urban Local Bodies in the country have prepared long term plans for effective Solid Waste Management in their respective cities. For obtaining a long term economic solution, planning of the system on long-term sustainable basis is very essential

As per the World Bank Statistics, incorporated by the High Powered Expert Committee in its Report on Indian Infrastructure and Services, the following is the report card on Solid Waste Management in Indian Cities:

- Primary collection – 38 per cent
- Segregation of recyclables – 33 per cent
- Street sweeping – 72 per cent
- Transportation – 52 per cent
- Processing – 9 per cent
- Disposal – 1 per cent

The Energy and Resources Institute (TERI) has estimated that by 2047, waste generation in Indian cities will increase five-fold to touch 260 million tonne per year (Asnani 2006). A study by the World Bank (2006) puts India's annual generation of municipal solid waste to be somewhat lower, i.e., in the range of 35 to 45 million tonne, amounting to about 100,000 to 120,000 metric tonne every day. It is also estimated that the annual increase in overall quantity of solid waste in India's cities will be at a rate of 5 % per annum.

The fact that a large part (over 60%) of India's waste is biodegradable, provides an opportunity for composting. While lifestyle changes, especially in the larger cities, are leading to increased use of packaging material, and per capita waste generation is increasing at about 1.3% per annum, the biodegradable component is still expected to be much higher than in industrialized countries.

Even with **current levels** of highly inadequate service, solid waste management accounts for 25-50 % of a ULB's expenditure (World Bank 2006), but cities recover less than 50 per cent of the O&M cost, according to a study by the Ministry of Urban Development, Government of India (2010b). The distribution of the expenditure is heavily loaded in favour of collection and transportation, and little attention is paid to processing and scientific disposal of the waste.

3. Current Status of SWM in ULBs of Andhra Pradesh

Urban Population in Andhra Pradesh is growing at 33.49% compared to the Country's 31.16%, in 2011. As per 2011 Census, total Population of Andhra Pradesh, which is 8.46 Crore, 2.8 Crore live in Cities and Towns. The overall decadal growth rate of Urban population in the State is 36.26 percent as compared to the 14.93 in 2001 and as against India's 31.80 percent as per the 2011 census. The total census town have increased from 210(2001) to 353(2011) with more than eight (8) districts have witnessed a growth of more than 50 % in its urban population. The urban population in Andhra Pradesh is projected to increase to 45.5 million or 4.55 Crores by the year 2030 constituting 46 percent of total population. Including GHMC, there are about 182 ULBs comprising of 19 Corporations, 113 Municipalities (of all grades), 50 Nagar panchayaths. The Class-1 towns in state have increased from 39 (2001) to 46 (2011).

The ULBs in the Andhra Pradesh state on an average generates about 9754 MT of wastes per day and in terms of the per capita of waste generation in the ULBs ranges from 0.2-0.4 kg/per day. The quantities of waste are growing 5% annually with the increasing per capita generation and change in living standards especially in the class-1 cities. Therefore, there is need to enhance waste management and handling capacity. ULBs in state spend around Rs. 500 - 1500 per tonne/day being paid from Municipal budget. Of which, 60-70% on collection alone, 20-30% on transportation, Less than 10% or less on Processing and Disposal activities. Low investments with majority of the ULBs lack proper treatment and disposal facility. The NUSP rating of the class-1 cities in state in 2009 indicates have poorly rated the cities and have recommended for immediate need for improvement in sanitation situation.

Government of Andhra Pradesh has taken a proactive interest in encouraging ULBs in the state to comply with the MSW rules 2000 and has spent entire allocation of 374 Crores under the 12th Finance Commission grants for development of the solid waste infrastructure and services. The mission mode program was conceptualized and implemented with the support and involvement of the community based organizations. Despite of the efforts, the success has been limited to primary collection and transportation but a great deal is still to be achieved to comply with the MSW Rules in totality especially in relation to the treatment and disposal of waste.

Andhra Pradesh is one of the fore-runner in initiating 'Regional Cluster Based approach' for the MSW based Integrated Waste to Energy plants on PPP basis by grouping the then 124 ULBs into 19 clusters in the year 2004., however, the results have not delivered performance as anticipated. Presently, only one WTE plant is running its operations and the quantity of waste that has been actually processed in the plant is not monitored. The main reasons were over estimation of revenues, lack of viable business models and the inability to raise the required funds by the WTE plant developer and may not be attributed to the very concept of 'Regional MSW Facility'. In addition to this, independent WTE plants started of in Vijayawada and Hyderabad have closed their operations due to the technical reasons.

Apart from this, a very few smaller ULBs in the state have attempted the composting, vermin- composting plants for processing of organic waste in smaller scale through involvement of NGOs and CBO's have seen some degree of success but the same have failed due to lack of sustained interest. The key issues associated with composting are lack of segregation, marketing and quality of the compost. Moreover, till now no city across all class of cities in the state has set up

the scientific landfill expect the cities OF Hyderabad, Vishakapatnam & Vijayawada where the developed the landfill under JNNURM are under process.

4. Approaches for Solid Waste Management

4.1. Decentralized vs. Centralized approach

MSW Management project can be centralized or decentralized waste management system depending upon the profile of the locality in terms of composition of waste, availability of land for processing waste, market linkages, health risks and extent of in formalization of the waste management system.

Centralized PPP models are suitable for urban areas where significant economies of scale are possible and the composition of waste allows for greater extraction of value from the waste through technological solutions. Health hazards due to inefficient waste disposal and non-availability of land in close proximity of localities are other two important factors to be considered while choosing a centralized waste management system. Centralized waste management systems at the city level are being practiced in Guwahati, Hyderabad and Chennai, among others. Regional level MSW management facilities have come up in Tamil Nadu and Gujarat.

The decentralized method of managing a city's waste involves management of municipal waste by various small waste management centers within the locality. This allows PPPs at the unit level where micro-entrepreneurs can work with the ULBs to produce compost or other value added products from the waste and the ULBs either on its own or through a bigger private partner manages the collection of refuse and maintenance of landfill sites. .

Decentralized process of collection and processing of wastes, avoids the carting of wastes too far off dumping sites. It reduces the expenditure of imported diesel, consequent traffic congestions, air pollution and road maintenance costs. It also reduces the contamination of ground water through the seepage of leachate. Cities like Namakkal and Trivandrum, among others, have engaged SHGs and NGOs for (decentralized) management of waste.

4.2. Management of Multiple Solid Waste streams

Municipal Solid Waste consists of Household Waste, Construction and Demolition Debris, Horticulture, and Waste from Streets. Municipal Solid Waste to be segregated into groups of bio –degradables , recyclables and hazardous waste. Bio-degradables like organic waste from kitchen, market and abattoir to be converted into rich organic manure or energy. Plastics, papers, glass; metals are to be recycled into new products. The construction & demolition waste to be used as landfill cover. "Segregation" shall remain to be centric approach solution. These further creates an opportunity to order the sequence of collection and processing of waste – for instance - vegetable market waste which is high on organic content can be collected and processed on a daily basis and on a decentralized model with the facilities being set up at the markets itself or at centralized processing unit. In case of recyclables or dry wastes, segregation by sorting them further into plastics, paper, metal, glass, and fuel (coco nut shells) and rubber. Bio-medical, hazardous and e -Waste to be managed by concerned authorities as per the existing legislations. The road sweepings, construction and demolition and the horticulture debris are to be collected separately and processed with. The non-recyclable waste components and inert would finally to be dispose off into scientifically designed sanitary landfills.

4.3. Hierarchy of Waste Management – 5Rs (Reduce, Reuse, Recycle, Recover and Remove)

The framework proposes to have a multipronged approach that includes the 5Rs principle Reduce, Reuse, Recycle, Recover and Remove.

The first choice of measures in waste management, is avoidance and waste reduction. This step aims for goods to be designed in a manner that minimises their waste components. Also, the reduction of the quantity and toxicity of waste generated during the production process is important

Re-using an article removes it from the waste stream for use in a similar or different purpose without changing its form or properties. The recycling of waste, which involves separating articles from the waste stream and processing them as products or raw materials. This approach seeks to recycle a product when it reaches the end of its life span.

Recycling is process of transforming materials into secondary resources for manufacturing new products. Promotion of waste recycling sector and providing that with an institutional support can and motivating all the stakeholders to segregate at source of generation

Recovery involves reclaiming particular components or materials, or using the waste as a fuel. Material recovery involves a variety of mechanical or biological processes that remove a variety of materials from the waste stream.

Remove refers to residuals management or the management of materials which remain after the previous 4Rs have been applied. The last step of the waste management when the quantity of waste cannot be reduced during production, the purpose of implementing the waste management hierarchy is to use waste as a resource and divert these potential resources from dumpsites / landfill.

5. Vision:

The Municipal and Urban Development Department, Government of Andhra Pradesh, have initiated several Institutional reforms, like establishment of AP Solid Waste Management Board under the Chairmanship of Honorable Chief Minister, State Level Official Committee and Expert Committee to address the issues relating to Solid Waste Management in ULBs of Andhra Pradesh. The entire 12th Finance Commission Grants of around 375 Crores were earmarked to Solid Waste Management which is unique in the Country has been effectively utilized in strengthening the SWM infrastructure and service delivery. 'Cheta Pai Kotha Samaram' – 'New War on Waste' was program based initiative launched on state wide scale has successful in creating participatory based innovative approaches. Under the 13th Finance Commission Utilization of grants, Integrated SWM has been included as one of the admissible components for utilization of grants by ULBs for improvement of Urban Services.

The Department has regularly conducted workshops, seminars and meetings involving Municipal Functionaries, other related Departments, Civic Societies, and institutions partnering in technical matters such as GIZ, ASCI based on which, the following vision has been formulated:

"to equip the AP cities with efficient, environmentally friendly and sustainable waste management system with complete safe collection, transportation, treatment & disposal facilities and achieve the service benchmarks "

5.1. Goals and Service outcomes

The overall goal is to ensure 100% compliance to the MSW (Management and Handling) Rules 2000 and related legislations w.r.t to municipal solid waste in all the cities and towns through multi stakeholder partnership approach. The specific goals are:

- ❖ 100% Door to Door collection and Source Segregation
- ❖ Efficient collection and safe transportation of wastes generated in the cities
- ❖ 100% treatment and scientific disposal facility & cost recovery
- ❖ Better awareness among the urban population and community mobilization participation
- ❖ Capacity Enhancement and Optimization of the human resources in SWM
- ❖ Strengthen the existing bye-laws for better regulation and user charges
- ❖ Encourage PPP in developing integrated treatment and treatment on Regional approach

6. Key Issues of Solid Waste Management

- ❖ ULBs lack resources, systems and capacity for development of treatment and disposal of solid waste
- ❖ Lack of substantial capital and O&M expenses without corresponding and matching revenues
- ❖ Lack of support in financial, technical and project development at state level to ULBs in identifying right technologies, processes, structuring projects and implementation. The role of the technical and advisory agencies like the APPCB, NREDCAP APTDC and PPP cell, APIA has been limited.
- ❖ Lack of awareness about the importance of good SWM practices especially about waste segregation
- ❖ Lack of policy framework in operationalizing PPP in MSWM and contract competence
- ❖ Not in my backyard (NIMBY) phenomenon, land acquisition is major issue in SWM projects and is a major cause of delay; especially in processing & landfill facilities
- ❖ Lack of technical expertise and institutional arrangements
- ❖ Inadequate equipment and inappropriate technology choices
- ❖ Lack of willingness to charge user fees provisions in Municipal Acts for levy of user charges
- ❖ Lack of Capacity in ULBs with reference to the processing technologies and scientific landfills even after a decade.

6.1. Guiding Principles of the SWM Strategy

- ❖ Defining the roles and responsibilities of various stakeholders and putting in place an operating framework

- ❖ Greater emphasis on civic engagement by involving NGOs, women community groups, Ward Committees/Sabhas, Area Sabhas, etc., in awareness generation
- ❖ Establishing Institutional mechanism at State Level for planning, technical, financial and implementation support
- ❖ Promoting PPP investments for developing treatment and final disposal facilities on Regional level on Cluster based approach

7. Strategic Interventions

The proposed Strategy employs the six main elements

1. Door to Door Collection of Waste generated
2. Waste minimization and promotion of recycling of waste
3. Engaging stakeholders in implementation
4. Processing, Treatment and Disposal of Waste
5. Strengthening the capacities of the ULBs
6. State Level Institutional arrangements & Program support

7. 1. Door to Door Collection and Transportation of Waste generated

1. Organizing door-to-door collection of waste to be the irreversible strategic approach to prevent residents from dumping their garbage out. The waste collected from door-to-door should be source segregated and collected separately in wet and dry waste from all sources. Community level large and unsightly garbage bins to be withdrawn from streets and ' Litter Bins' to be limited to busy commercial areas and public places.
2. ULBs to encourage decentralized, community-managed primary collection system preferably managed by CBOs such as residents' associations, and welfare societies and Slum Level Federations that will be financially assisted and equipped for the purpose.
3. Route mapping of door to door collection activities on City Wide Scale for improved coverage. Primary vehicles to be used to collect and transport waste from lanes and by- lanes to the main roads synchronizing with bulk transportation vehicles.
4. The waste should be transported in a segregated form (wet and dry) by vehicles, at the primary collection and secondary/ bulk collection systems.
5. Waste to be handled mechanically across the MSW value chain with minimum human contact with waste. Modernize fleet management services with covered transportation system to be adopted for transportation of the waste.

7.2. Waste minimization and promotion of recycling of waste

1. Municipal Solid waste to be managed in accordance with the 5R Principle(Reduce, Reuse, Recycle, Recover and Remove) with special emphasis on waste prevention approaches.
2. Promotion of biodegradable and recyclable substitutes for non-biodegradable materials like plastics and develop systems for their recycle, reuse, through promotion of relevant technologies, and use of incentive based instrument, and developing and implementation of measures for reduce and remove of non-biodegradables through participatory approaches.

3. Municipal Solid Waste to be segregated at source into groups of organic, inorganic, recyclables and hazardous waste. MSWM constituents like metal, plastics, glass and paper wastes are to be segregated and recycled. Each ULB to identify land to establish Dry Waste Sorting facilities (Material Recovery Facilities) wherever possible through social entrepreneurs, common interest groups of informal sector like rag pickers associations and cooperatives in lines with Swachh, Pune, CBOs like Women Self Help Groups(SHGs), Slum Level Federations(SLFs), Apartment Societies, Resident Welfare Associations (RWA) and NGOs to be involved.
4. Encourage individual households/ apartment complexes for setting 'source composting options' like vermin composting/ composting at households level, portable new age small scale bio gas units for kitchen waste, and Small scale decentralized units for treating of organic waste fraction to the places like community level, large hotels, marriage halls, hostels, organized colonies and slums having strong RWAs and SLFs respectively.
5. ULBs to set up community-based composting yards on suitable road-side locations, institutional campuses and public parks for horticulture waste or leaf litter and encourage interested sweeper groups, apartment societies, resident welfare associations or CBOs to maintain them and use the proceeds from the sale of manure produced by them.
6. Phasing out and upgrading old open dumps in the ULBs and reclamation of the dumpsites through recovery of the decomposed matter through 'Bio- mining' and capping of the non-bio degradables in scientific manner as per the MSW (Management & Handling) Rules 2000 .
7. Landfill sites to be used sparingly and only as a last resort in waste management hierarchy and shall not exceed 20% of the total municipal solid waste generated. Organic material and recyclables to be recovered fully prior to land filling of only inerts.

7.3. Engaging stakeholders in implementation

1. Encourage sound contracting practice begins with setting operational goals, defining performance or service benchmark standards and specifications and producing a document that communicates these to private, semi-private, NGO, CBO or other economic actors who would like to participate as service providers.
2. Awareness among stakeholders on SWM is important and continuous process. There need to intensify extension activities so as to continuously motivate and educate the stakeholders through effective IEC programs. ULBs to raise the awareness of city stakeholders through regular meetings with (households, establishments, industries, elected representatives municipal functionaries, media, etc) since improved sanitation can ensure improved public health and environmental outcomes only if considerable changes in behavior and practice take place across the spectrum of the society.
3. ULBs to adapt mechanism for enforcement, supervision and monitoring the Pin Point System for optimum utilization of manpower resources through social audit mechanisms. The Pin Point System implementation shall involve the Resident Welfare Associations, Community Based Organization and other stakeholders in the process of monitoring of SWM services for improved accountability.
4. ULBs may formulate strategy to organize and strengthen CSOs (Civil Society Organizations-RWAs) in Non Slum Areas for effective democratic and participatory functioning devising methodologies on the lines of CBOs like SHGs/SLF/TLF in the Slum Areas to ensure Community participation and ownership of Solid Waste Management on sustainable mode.

5. ULBs to disseminate relevant information on waste quantities and characteristics; waste treatment, recovery and disposal; the costs of providing the waste management services; the sources of funding used to finance the services in public domain. Publication of reports on Annual report of the Service Levels.
6. ULBs to constitute City Sanitation Task Force involving the stakeholders in Planning, Implementation and Monitoring of the City Sanitation Plans.

7.4. Processing, Treatment and Disposal of Waste:

1. ULBs to adopt a mix of multiple of options of centralized (city & regional level) and decentralized options for treatment and scientific disposal.
2. Waste treatment and disposal may need to be organized on a unified basis across the metropolitan areas as a whole, landfills and other waste management facilities to be regionally shared, clubbing of multiple municipalities and creation of clusters, accompanied by regional cooperation and fair cost-sharing arrangements.
3. Decentralized processing units at community level and city level in case of municipalities considering the quantities of waste generated, economics of clustering them into regional facilities.
4. Development of State level MSWM project for operationalizing and scaling up the strategy covering either the PPP and Non PPP approaches or combination of both in all the ULBs in the state. The Collection, Transportation components to be implemented on Non PPP approach as ULBs have the required experience and expertise whereas PPP approach may be confined to for setting up of transfer stations, Processing and Landfill projects. In case of outgrowths, expanded areas, and agglomerations the Integrated SWM PPP based approach for the entire MSWM value chain operations may be adopted with highest level of transparency.
5. Treatment of segregated waste to be done through appropriate technologies based on the feasibility, characteristics and quantities of waste. The technology options could be Composting, Biomethanation, Waste to Energy, RDF, Co-Processing of dry segregated rejects in cement/ power plants, which also includes utilization of construction and demolition debris and any other options as endorsed by the Central Pollution Control Board.
6. Treatment and Scientific disposal is net cost based and recovery of O&M cost is technology dependent. Tipping / Processing Fee is the mechanism to compensate the in PPP projects developed for treatment and disposal.

7.5. Strengthening the capacities of the ULBs

1. State Government to guide ULBs to draft model byelaws and legislations to facilitate levying user charges, penalties for violators and explore revenue options like revenues from sale of waste and by products, CDMs, SWM Cess, Landfill tax or Processing fee etc., to achieve financial sustainability.
2. Set out operational guidelines for the procurement of equipment and services based on the size of the town and population. Emphasis to mechanization for segregated collection, segregated transportation, processing, treatment and scientific disposal to reduce the manual and multiple handling of garbage.

3. Provide incentives and market linkages for the byproducts like compost and other recyclables. Ex. Creation of market avenues through involvement of the Department of Agriculture, Horticulture, Forests and Fertilizer companies as well as other agencies in the farm sector to ensure effective marketing of the compost as well as its by-products.
4. MSWM plan as part of the City Sanitation Plan and City Development Plan to cover the baseline data assessment, current practices, gaps in terms of manpower and infrastructure, existing facilities of treatment & disposal, current revenue and expenditure.
5. In compliance to the State Sanitation Strategy and National Urban Sanitation Policy (NUSP) all the ULBs in the State to prepare the City Sanitation Plan for addressing the issues short, medium and long terms actions in addressing the issues.
6. Data on quantities of waste generated is inconsistent in the ULBs. All the Class-1 cities in the state shall establish weigh bridge facilities for quantifying the solid waste generated in the city on daily basis prior to its treatment and disposal.
7. Formulate and implement state and ULB level capacity building programs on SWM topics based on contract management & monitoring, environmental compliance and complaint redressal& monitoring systems including attitude and behavior change and creation of platforms for field based interactive learning and exposure visits.
8. Formulate and implement state and ULB level for capacity building programs to the field staff, supervisory staff, contract employees, officers, civil society organizations, Community Based Organizations, on SWM topics based on the responsibilities including attitude and behavior change and creation of platforms for field based interactive learning and exposure visits.
9. ULBs to provide adequate protection and health care facilities to its workers. The local body, as a policy, should provide adequate protective clothing and health check up from time to time to the staff to ensure that their health is not adversely affected on account of their handling of solid waste. Free medical services and insurance to be made available to those whose health is affected on account of handling solid waste
10. Strengthen the institutional capacities of the ULBs as per the size of the ULB. The ULBs to have dedicated technical staff within the SWM department (Environmental Engineer) who should be responsible for the SWM activities within the city.

7.6. State Level Institutional Arrangements & Program support

1. Recognize and establish Regional MSW Project approach in case of smaller ULBs, Metropolitan Level Approach for integrated treatment and disposal of MSW and reorganize the existing clusters more comprehensively.
2. State to designate a nodal agency as company or state-level utility (which may be called the '**State MSW Management Company Limited/Utility'—the 'Company/Utility'**') for the purposes of identifying and enabling the development of **Regional MSW Projects** within the state. Each such project should be of 300 TPD of MSW or more.

3. Setting up a Technical Cell with experts to extend support to the ULBs. The Technical cell would support in identifying sites for processing, treatment and landfill facilities (both individual and regional), PPP models, technologies, structuring and financing of projects including implementation and monitoring of the Mechanical Composting, Waste to Energy and Bio- Methanization, Co-Processing in cement/ power Projects.
4. State Level Sanitation Committee set up to review the progress of MSW management in ULBs across the state on regular basis and provide necessary advice in upscaling.
5. State to appoint an empowered committee for speedy and justified recommendations under "Andhra Pradesh Land Management Act 2013" for allotment of Government land for treatment and disposal of waste free of cost or on nominal lease rental basis for setting up treatment plants and sanitary landfill sites in land use plans keeping in mind requirements for the next 33 years and fast tracking the process under the provision of the Act.
6. Encourage ULBs to perform better in all aspects of planning, coordination, and implementation, the state government to institute an annual awards scheme to the best performing towns to create a competitive spirit among cities in AP.

**Dr. S.K. JOSHI,
PRINCIPAL SECRETARY TO GOVERNMENT (UD)**

SECTION OFFICER.